

## SINGLE SENSING MULTIPLE OUTPUT SYSTEM

### ABSTRACT OF THE DISCLOSURE

A sensing system for a vehicle that includes a single sensor element and multiple outputs. An engine controller is responsive to the multiple outputs, output circuits and a supervisor circuit in the system monitors the sensor element and shared circuits. If the sensor element fails, or if a connector fails or if the supervisor circuit indicates a circuit failure, one or more of the outputs will go outside of their normal operating range into a diagnostics range to allow the engine controller to take the appropriate action.